

Illegal capture and internal trade of wild Asian elephants (*Elephas maximus*) in Sri Lanka

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Abstract

The illegal wildlife trade is considered one of the major threats to global biodiversity. Asian elephants (*Elephas maximus*) have been highly valued by various cultures for use in religious and spiritual contexts, as a draft animal, and more recently, as a tourist attraction. Thus, the demand for captive elephants is high. Wild Asian elephants are taken from the wild, often illegally, to maintain these captive populations due to the unviability of captive breeding programs. For the first time, we documented the extent to which wild elephants are being illegally captured and traded in Sri Lanka between January 2008 and December 2018. We collected data from case records maintained by the Sri Lanka court system where the suspects of illegal elephant trade were prosecuted in addition to information gathered by archives and interviews with various stakeholders. We documented 55 cases where elephants were illegally traded. This is probably an underestimate due to the mortality rate of elephants during capture operations, and challenges in collecting data on this highly organized illicit trade. Nearly equal numbers of male and female elephants were traded and more than 50% of them were juveniles, aged ≤ 5 years. Significantly more elephants were found to be seized in 2014–2015 than in the other time periods combined. We found evidence of the illegal capture of wild elephants from wildlife protected areas and state forests. More importantly, we

identified evidence of corruption of wildlife officers, involvement of politicians and other high-ranking personnel in the illegal wildlife trade, and lack of active enforcement of wildlife law as major challenges to overcome if the illegal capture and domestic trade of wild elephants in Sri Lanka are to be halted. Based on our study, we make a series of recommendations that should result in implementing policy to reduce the trafficking of Asian elephants in Sri Lanka and improve the conservation management of the species.

Keywords

Asian elephant, endangered species, illegal trade, national parks, wildlife crimes, wildlife trafficking

Introduction

The wildlife trade is one of the most profitable multi-billion dollar enterprises, involving direct exploitation of wild plants, animals, other organisms and their derivatives (Rosen and Smith 2010; South and Wyatt 2011; Sas-Rolfes et al. 2019). Wildlife trade operates at a global level, both legally with proper governmental and international licensure or through illicit means, and fundamentally involves trading animal and/or plant material for monetary gain or for exchange of goods and services (Wyatt 2013). Although large volumes of wildlife trade take place across international borders, a substantial amount, and perhaps most, of this trade happens within nations (TRAFFIC 2008; Zhang et al. 2008; Nijman 2010). Wildlife is traded for a variety of uses such as food, medicine, luxury goods, exotic pets, entertainment, spiritual, and laboratory use (Rosen and Smith 2010; Wyatt 2013; NRDC 2020). Possession of certain wildlife products may display social status, wealth, and affluence; the rarest species may incur great demand, high prices and high profit margins (Das 1990; Nijman and Shepherd 2010; Gunasekara 2011; South and Wyatt 2011; Tella and Hiraldo 2014). Thus, species susceptible to harvesting from the wild are pushed further towards the edge of extinction particularly when population growth cannot replenish the rate of harvests (Wilson 1988; Courchamp et al. 2006; Tella and Hiraldo 2014).

Wildlife trade is considered a major threat to global biodiversity (Nijman 2010). For some species, harvesting from the wild for trade is the primary cause of population decline and local extirpation (Rabemananjara et al. 2007; Nijman and Shepherd 2010; Gunasekara 2011; Tella and Hiraldo 2014) whereas in several other species, trade-based overexploitation has greatly stressed the predicament of habitat loss (Sutherland et al. 2009; WWF 2017). Additionally, the wildlife trade acts as a potential source for the spread of invasive species and disease-causing agents (Karesh et al. 2005). Much of the illegal trade in wildlife tends to be associated with a number of charismatic and/or high-profile species and elephants fall into the top-end of this category (Smith et al. 2009; Nijman 2010).

Throughout their centuries-long history across Asia, Asian elephants (*Elephas maximus*) have been revered and closely connected to, and highly valued by, various cultures for use in religious and spiritual contexts, as draft animals and, more recently, as a tourist attraction (De Silva and De Silva 2007; Fernando et al. 2011). As a keystone species, they also play an important role in maintaining the regional forest

structure (Ishwaran 1993; Sukumar 2003; De Silva and De Silva 2007). The IUCN Asian Elephant Specialist Group (2019) estimated the global population size of Asian elephants to number 45,671–49,028 individuals. After India, the largest remaining population is found on the island of Sri Lanka; in 2019 this was estimated at ~5,900 individuals or about 13% of the global total (Fernando et al. 2019). At a global level, Asian elephants are listed as ‘Endangered’ in the IUCN Red List (Choudhury et al. 2008) and it receives this same listing in Sri Lanka (Ministry of Environment 2012).

While habitat loss and fragmentation have been historically considered the key driving forces of population decline of Asian elephants, in recent decades, human-wildlife conflict has intensified (Ishwaran 1993; Bandara and Tisdell 2003; Fernando et al. 2019). Human-elephant conflict is accentuated by a growing human population that is encroaching, degrading and fragmenting natural elephant habitats, and forcing elephants into closer contact with people (Fernando et al. 2005, 2019; Choudhury et al. 2008). A recent survey showed that elephants occupy over 60% of land and people are resident in 69% of the elephant range in Sri Lanka (Fernando et al. 2019). Furthermore, the human-elephant conflict in the country has increased markedly in intensity and its geographic extent, claiming 263 elephants per annum (the global highest annual elephant death rate) in 2010–2019 (Prakash et al. 2020). Meanwhile, the live capture of wild elephants, previously used for labor and now increasingly for tourism, has played a key role in the decline in wild populations and is now considered a potentially significant threat to wild Asian elephants (Shepherd and Nijman 2008a; Nijman 2014; Schmidt-Burbach et al. 2015).

Throughout their natural range, the numbers of captive elephants are decreasing along with their role as draft animals, increasingly being replaced by machinery. However, their use in tourism is on the increase and may sustain the demand for captive elephants. Efforts to breed Asian elephants in captivity appear to be lagging behind with the noteworthy exception of the Pinnawala Elephant Orphanage in Sri Lanka (Fernando et al. 2011). A long gestation period, low birth rates in captivity, the purported abundance of wild populations, and the previous widespread availability of Asian elephants in the wild have hindered interest in captive breeding, hence the capture of wild individuals to maintain captive populations has long been preferred over breeding in captivity (Lair 1997; Leimgruber et al. 2011). Furthermore, the authorities’ actions to stop the smuggling have been limited and ineffectual, so sustaining the illegal wild elephant trade in Sri Lanka (personal observations). As a result, captive populations are still largely maintained by wild captures, both legal and illegal, which is extremely detrimental to the conservation of this endangered species (Fernando and Pastorini 2011; Baker et al. 2013).

The illicit trade of wild-caught Asian elephants is prominent in several nations in Asia, particularly in Thailand, Myanmar, Laos, India, and Sri Lanka (Baskaran et al. 2011; Nijman 2013, 2014; Prakash 2014; Hankinson et al. 2020). Nijman (2014) reported that 79–81 wild elephants were illegally captured from the wild, mostly in Myanmar, and traded in Thailand over a two-year time period (April 2011–March 2013). In addition, in the 1990s, about 50–100 wild elephants were smuggled from

Myanmar every year (Lair 1997). Even though statistics are not available, the illegal captures of wild elephant calves to maintain captive populations have been reported from India (Baskaran et al. 2011).

Although appreciable numbers of studies have been conducted elsewhere in Asia, no comprehensive studies have been done on the illegal live wild elephant trade in Sri Lanka. In this study, we document the extent to which elephants were being illegally captured in the wild between January 2008 and December 2018, and present information on biometrics of smuggled elephants, an analysis of legal documentation process (and the violations) together with information on capturing and trafficking methods, source areas, trade routes, stakeholders involved, and the market value of live Asian elephants in Sri Lanka using best-available data. We expect this information to be used in implementing policy to reduce the trafficking of Asian elephants and conservation management of the species.

Methods

This study was conducted using both quantitative and qualitative data covering the entire country of Sri Lanka. The data for this study was mainly generated through case records maintained by the Sri Lanka courts system where the suspects of illegal elephant trade were prosecuted. Thirty-nine criminal proceedings filed before 15 Magistrate Courts by the Department of Wildlife Conservation of Sri Lanka (DWC) and Crime Investigation Division (CID) of Police Department of Sri Lanka were utilized in this study. A variety of other reliable sources were also used that documented the elephant trade in Sri Lanka. These include reports of three committees appointed by the line ministry of wildlife conservation between 2014 and 2018 to investigate the illegal live wild elephant trade, queries of information for clarification made by Auditor Generals' Department of Sri Lanka, and investigative reports and newspaper articles by environment activists and journalists. Interviews with 23 stakeholders (i.e. field DWC officers, investigative journalists, environmental activists, animal welfare activists, environmental lawyers, key informants, elephant owners, mahouts, and suspects) were also employed in data collection, specifically on major source areas for elephants, methods of live capture, transportation of captured elephants and trade routes.

We have deemed the elephants to be suspected smuggled elephants when legal proceedings were instituted or conducted by the authorized institutions against the respective suspects under the provisions of the Fauna and Flora Protection Ordinance No. 2 of 1937 and/or the Public Property Act No. 12 of 1982 with seizing the elephants ($N = 39$; Dissanayake 2016). Additionally, we included information on suspected smuggled elephants based on CID investigations, but the elephants were not yet seized ($N = 5$), and elephants disclosed by the DWC and environmental activists from urban areas ($N = 3$) and wilderness areas ($N = 8$; Dissanayake 2016). The elephants seized from wilderness areas were under restraints by the smuggling rackets at the time of seizure (see Table 1 and Fig. 1).

Table 1. Summary of cases utilized for this study.

Category	Total number of elephants	Remarks (N = number of cases)
The case is being heard	39	Smuggled elephant according to the Auditor General's Department observations (N = 3)
		Irregularities have been found in registration documents during the CID investigations (N = 10)
		Smuggled elephant according to the Auditor General's Department observations. Irregularities have been found in registration documents during the CID investigations (N = 11)
		No such information is available (N = 15)
Data on legal proceedings not available	11	Disclosed by the DWC from urban areas (N = 3)
		Seized by the DWC from wildernesses (N = 8)
CID investigations without seizing the elephant	5	Irregularities have been found in registration documents during the CID investigations (N = 1)
		Handed over to the Pinnawala Elephant Orphanage (N = 1)
		No such information is available (N = 3)
Total	55	

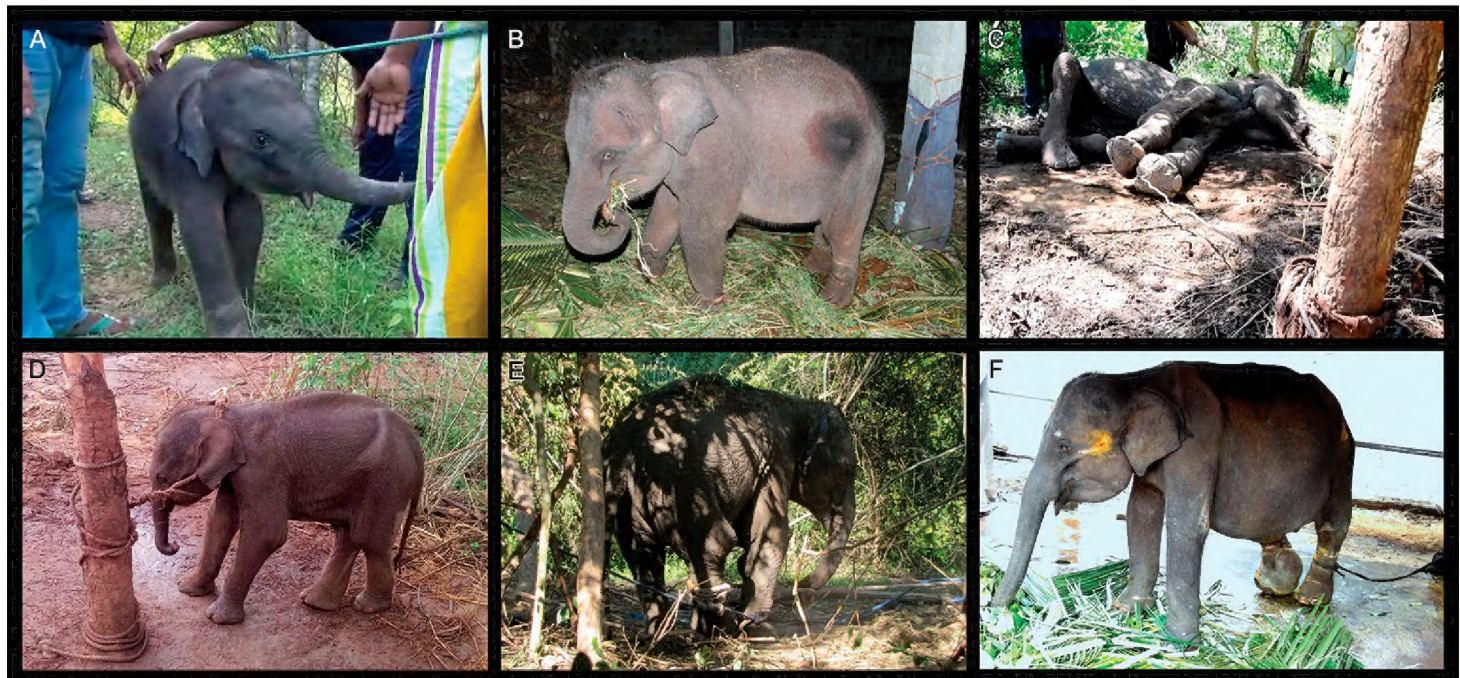


Figure 1. Some illegally captured Asian elephants (*Elephas maximus maximus*) in Sri Lanka: **A** a male, 2–3 years old juvenile (Gōnaganāra 2) seized in 2017 from Monaragala District **B** a male, 3–4 years old juvenile (Hamu) seized in 2014 from Gampaha District Nadika Hapuarachchi **C** a sub-adult, 6–7 years old (Gōnaganāra 1) seized in 2016 from Monaragala District **D** a female, less than 1 year old calf (Hambe-gamuwa) seized in 2016 from Monaragala District **E** unsexed, and unaged individual seized in 2014 from Kurunegala District **F** a male, 6–7 years old sub-adult (Sahayoga) seized in 2014 from Colombo District.

We used the average of estimated age range for analysis (e.g. estimated age of 3 or 4 years was calculated as 3.5 years). The life stages of elephants were categorized according to the following criteria: calves (≤ 1 year old), juveniles (2–5 years old), sub-adults (6–10 years old), and adults (≥ 11 years old). We analyzed temporal patterns in the trade in 2-year periods, beginning in 2008, using χ^2 tests, and differences between reported ages in the registration documents and estimated ages by veterinarians with a Mann-Whitney U test. We accepted significance when $P < 0.05$ in a two-tailed test (Zar 2010).

Results

Age and sex of suspected smuggled elephants

We found records of 55 cases of suspected smuggled elephants. Forty-six (83.6%) of those elephants had an identity reported with a name. Twenty-four (43.6%) elephants were females and 23 (41.8%) were males, while the sex of eight elephants (14.5%) was not reported. Two elephants (3.6%) were identified as calves (≤ 1 years old), 14 (25.4%) as juveniles (2–5 years old), 29 (52.7%) as sub-adults (6–10 years old), four (7.2%) as adults (≥ 11 years old) and six (10.9%) were not aged (Fig. 1). However, we identified a major gap between the reported age in the registration documents and the estimated age of elephants by the veterinarians of the DWC (Fig. 2). The average reported age in the registration documents of elephants ($12.3 \pm \text{SE } 1.0$ yrs) according to licenses was higher than the estimated age by the veterinarians ($6.9 \pm \text{SE } 0.8$ yrs); the difference is statistically significant ($z = 5.543$, $P < 0.0001$).

Legal analysis of suspected smuggled elephants

Only 33 (60.0%) elephants were registered while 17 (30.9%) elephants were not registered, three (5.4%) were under government letters of patent, and no information was available for two elephants (3.6%).

DWC and CID instituted 39 (70.9%) criminal proceedings before 15 Magistrate Courts against the suspects who were involved in the illegal live elephant trade in Sri Lanka. These suspected smuggled elephants were seized by the authorized institutions and kept at the Pinnawala Elephant Orphanage or Elephant Transit Home, Udawalawe. Three (7.7%) were considered smuggled elephants according to the Auditor General's department observation, 10 (25.6%) were considered smuggled elephants as irregularities were found in the registration documents during the CID investigations, and 11 (28.2%) were smuggled elephants according to the Auditor General's Department observation (with additional irregularities in registration documents as revealed by the CID investigations). Furthermore, CID was investigating five other cases, but elephants were not yet seized. Of these five, one is a smuggled elephant as irregularities have been found in registration documents during the CID investigations. One of these suspected smuggled elephants was voluntarily handed over to the Pinnawala Elephant Orphanage by the owner during the investigation (Table 1).

Three elephants were disclosed by the DWC and environmental activists from urban areas in Sri Lanka during the early phase of this study (Prakash 2014). These elephants were suspected as smuggled from the wild; however adequate information was not available. The remaining eight elephants were seized by the DWC from wilderness areas and found restrained by the smuggling rackets at the time of seizure (Fig. 1). These eight elephants were reported from Ruhuna (Yala) National Park ($N = 2$), Managed Elephant Range – Hambantota ($N = 2$), Galgamuwa, Maho, Weerawila, and Katagamuwa sanctuary (one in each location; Fig. 3). Moreover, six licenses were found

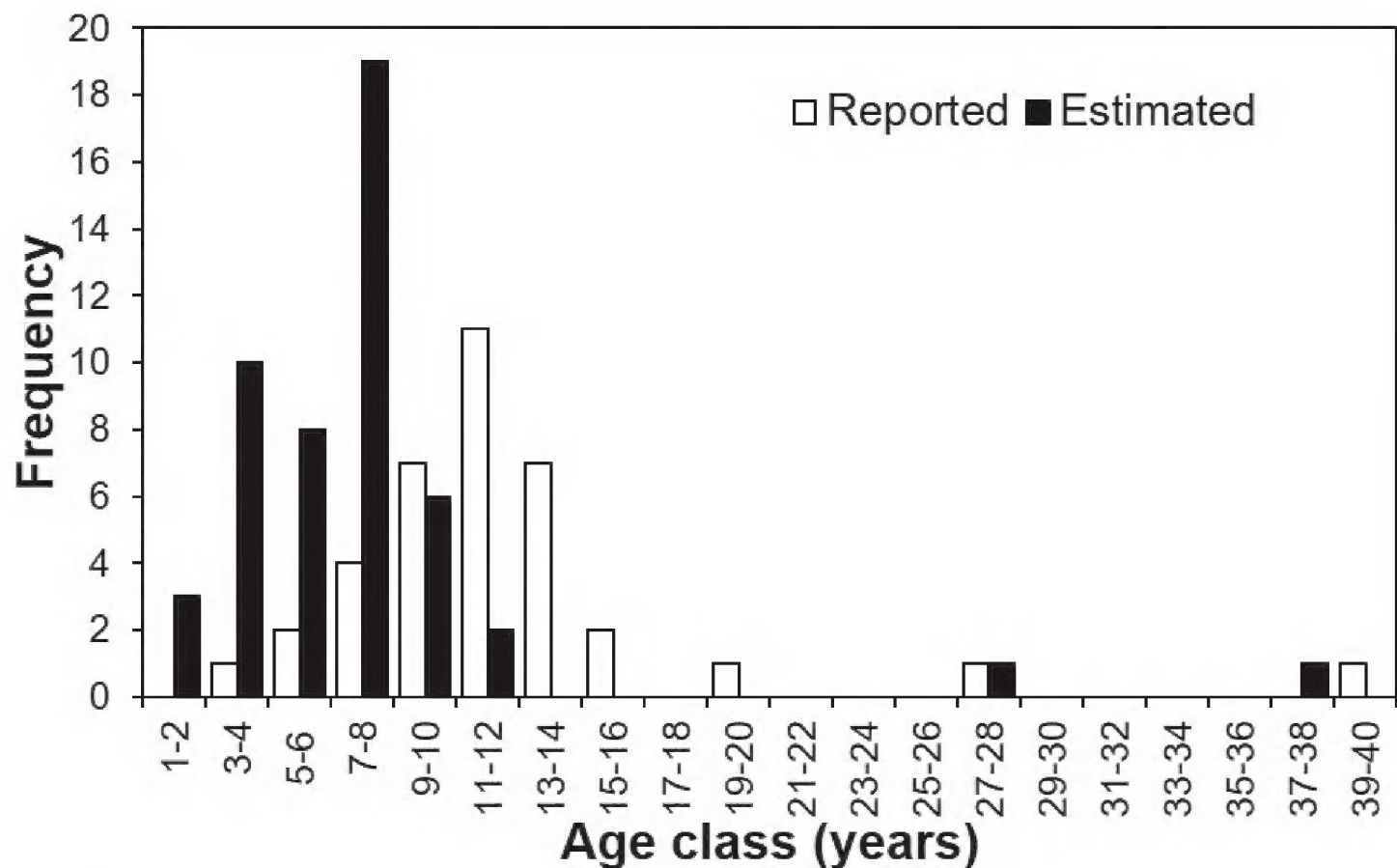


Figure 2. The distribution of reported age in the registration documents and estimated age by the veterinarians of the DWC of elephants studied.

without the existence of live elephants which may indicate plans for future smuggling activities. Therefore, it is clear that a minimum of 55 and possibly more elephants have been illegally captured from the wild in Sri Lanka during the period between January 2008 and December 2018 (Table 1, Figs 1, 3).

Perera (2015) reported that the last elephant birth in captivity was recorded in 1994. However, the report submitted to the Magistrate Court by the Director General of DWC on 09 July 2015 (DWC 2015) stated that 37 applications have been submitted for registration of elephant calves born in captivity during the period of 2000–2015. This raises a serious suspicion about the origin of these 37 elephant calves. Further, this report mentioned that DWC have registered 68 elephants under private ownership after the year 2009 (DWC 2015). Therefore, we find that at least 31 (i.e. 68 minus 37), and up to 68 elephants have been illegally captured from the wild. According to the same report, no elephant conception, birth, miscarriage or stillbirth in captivity was reported since 2009 in accordance with the 2009 amendment of the Fauna & Flora Protection Ordinance. Therefore, the last elephant registration in December 2014 as per the same report is also problematic because the average gestation period of an Asian elephant is 22 months (Lueders et al. 2012).

The discrepancies between the reported age in the registration documents and the estimated age of elephants by the veterinarians of the DWC suggest some irregularities in the elephant registration process. We found information about potential corruption at DWC from reports of committees appointed by the line ministry of wildlife conservation between 2014 and 2018 and queries of information for clarification made by

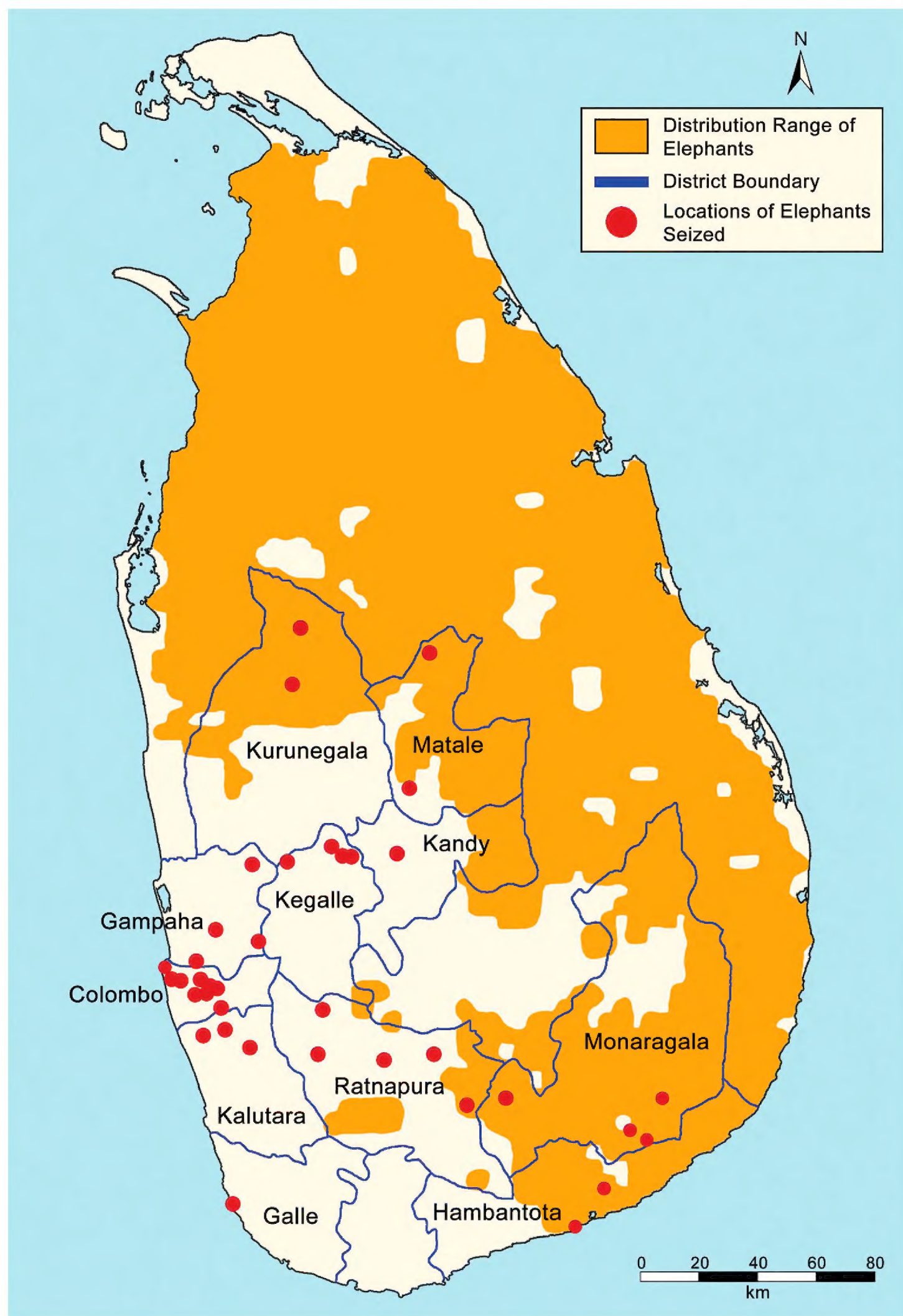


Figure 3. Spatial distribution of seized locations of Asian elephants from 13 districts of Sri Lanka (filled circles) overlaid on the distribution of wild Asian elephants in Sri Lanka (orange shade; after Fernando et al. 2019).

Auditor Generals' Department of Sri Lanka to investigate the illegal live wild elephant trade (see Auditor General's Department 2014; Dissanayake 2016). This included the fraudulent registration of elephants by tendering false and forged documents regarding the birth of elephant calves and matters in respect to the mother elephants, entering false minutes in files and altering entries and replacing photographs in older files. Original entries were erased and new entries were typed over these erasures. Photographs of elephants in the older files have been removed and these were replaced by new photographs of other elephants. To facilitate the fraudulent registrations and issues of licensing, the corrupted officers at DWC have maintained files without elephants and files where elephants have been reported dead without closing or revoking the said files.

Temporal and spatial trends of illegal capture of wild elephants

Elephant seizures were reported from eleven administrative districts of Sri Lanka with the highest number of seizures being reported from Colombo district (16 cases; 31.4%; Fig. 3). The highest number of seizures during the study period occurred in 2015 (20 cases; 36.4%), followed by 2016 (14 cases; 25.4%) and 2014 (11 cases; 20.0%). The number of cases we recorded were not homogeneously distributed over the six 2-year time windows ($\chi^2 = 94.2$, $df = 5$, $P < 0.0001$). Significantly more elephants were seized in 2014–2015 than in the other time periods combined ($\chi^2 = 75.3$, $df = 2$, $P < 0.0001$). Conversely, the periods 2010–2011 and 2012–2013, for which we found no evidence of elephant seizures, contained significantly fewer cases than in the other time periods combined ($\chi^2 = 7.88$, $df = 1$, $P = 0.005$).

Through interviews with field DWC officers and investigative journalists, we found direct photographic evidence (Fig. 1) for the illegal capture of wild elephants from wildlife protected areas and state forests including Ruhuna (Yala) National Park, Udawalawe National Park, and Katagamuwa Sanctuary and state forests in Managed Elephant Range – Hambantota, Galgamuwa, Maho, and Weeravila. We also suspect that wild elephants were illegally captured from Minneriya National Park, Kaudulla National Park, Ritigala Strict Nature Reserve, Sigiriya Sanctuary and Hurulu Eco Park, based on interviews conducted with the field DWC officers, investigative journalists, and environmental activists. Additionally, our interviews revealed that culprits have used various methods to capture live elephants from the wild, including capturing young elephants by either killing or sedating the maternal elephant by shooting or using tranquilizing guns, injecting tranquilizers into young elephants, pit-fall trapping, and noosing. It is also suspected that culprits have traded elephants in rehabilitation under the authority of the DWC at Elephant Transit Home (ETH) in Udawalawe, with or without the knowledge of the resident Wildlife Conservation Officers. Furthermore, interviews with the suspects revealed that young elephants orphaned as a result of human-elephant conflicts have also been subjected to trade. Usually, when there is an orphaned young elephant, the general public informs the DWC about it and ETH rescues and rehabilitates these young elephants. However, in some incidences,

some criminal enterprises may have intercepted the information flow and abducted the young elephants before DWC and/or ETH reached the orphaned elephant.

Reports of committees appointed by the line ministry of wildlife conservation between 2014 and 2018 to investigate the illegal live wild elephant trade (see Dissanayake 2016) and interviews conducted with field DWC officers, environmental activists, and local journalists provided evidence of the transportation of elephant from the wild by jeeps and vans with tinted windows. This somewhat mimics a motorcade of political elites, so preventing scrutiny by authorized officers and also distracting public attention. Container trucks were also used for calves and juveniles. The trade routes from source areas to detentions could even be public roads as smugglers get off scot-free through these aforementioned methods. Famous people in society, including businessmen, politicians, Buddhist monks, high-ranking government officers, magistrates, tourism entrepreneurs and armed forces personnel, have been suspected participants in the live elephant trade in Sri Lanka (see Auditor General's Department 2013; Dissanayake 2016). This is a very lucrative business and a single elephant can be sold for between 7.5 and 12.5 million Sri Lanka Rupees in 2018 (~USD 40,500–67,500; findings during this study).

Discussion

Our study has shown that the illegal wild elephant trade is a major challenge for the conservation and management of endangered Asian elephants in Sri Lanka. We found at least 55 cases of illegally captured elephants from the wild in Sri Lanka during the period of January 2008–December 2018. Although it is still only about 0.1% of total Sri Lankan wild population / year (55 cases over 10 years equals 5.5 cases per year), we want to stress that our number may represent an underestimate due to two major reasons; the secretive operations of this illegal trade in Sri Lanka, and the unreported mortality rate of elephants during the capturing process, transport and in captivity. Although our data was largely based on anecdotal reports (i.e. court reports, investigation reports, media reports, and stakeholder interviews), there is a consistency between sources that gives our claims a measure of legitimacy. More importantly, we have used the best available information from multiple sources to dissect the illegal live elephant trade in Sri Lanka.

The percentage of calves and juveniles in illegal trade (29.0%) is higher than in wild populations in Sri Lanka (17.8%; Perera 2015), and similar to that found by Nijman (2014) for illegally traded elephants in Thailand (i.e. 17/79, 21.5%). Unlike Thailand, we found an equal number of males and females, whereas in Thailand 80% were female (Nijman 2014). Without an established captive breeding program in Sri Lanka, the higher percentage of calves and juveniles in captivity suggest an input from wild populations providing further evidence of elephant smuggling.

The actual number of captures of elephants from the wild could be higher due to the high mortality rate in captivity under illicit trade. Even at ETH, the mortality rate of arrivals is around 40% where an intensive care facility with close monitoring by resident

veterinary surgeons and trained staff of DWC is maintained for orphaned elephants until they are fit enough to be released back into the wild (De Silva and De Silva 2007). Wildlife traffickers are unlikely to provide any veterinary care for illegally captured elephants. Additionally, the licenses maintained by the suspects without elephants show a range of ages from 1 year to 20 years. We suspect that they may have held these licenses with the expectation of smuggling elephants from the wild in the future. Additionally, the reported age of elephants based on registration documents is significantly higher than the estimated age by veterinarians, suggesting misconduct in registrations.

Smith et al. (2015) argued that corruption is one of the significant challenges in the conservation of elephants, while Milman (2013) identified the role that park staff, enforcement officers and politicians have been playing in the illegal trade of elephants. This chain of corruption is operated through a system of bribery, which may weaken efforts to combat the illegal elephant trade, and enforce wildlife conservation law (Barnes et al. 1995). Our findings suggest a similar chain of corrupt personnel behind the illegal wild elephant trade in Sri Lanka. The registration of wild-caught elephants falsely claiming that they had been born in captivity is very challenging due to the amended 2009 Act No. 22 of the Fauna & Flora Protection Ordinance. According to the amended act, in the event of a pregnancy of a captive female elephant, the owner of such an elephant has to report this to the Director General of the DWC including information such as the details of the sire, an uneventful death of the mother elephant during birth etc. However, elephant smugglers and corrupt officers have not been deterred in their activities by the above amendment. They had adopted devious methods like falsely backdating their applications and tendering fraudulent documents and affidavits containing false material to obtain registrations. Further, the minutes of the files had also been altered. The applications made in 2012, 2013, and 2014 were backdated to dates in 2008 with the involvement of corrupt officers of the DWC. This may explain the reason behind the significant difference between the reported age of elephants based on registration documents and the age estimated by veterinarians.

Wild elephants are often caught in Myanmar using pit fall traps where they are corralled into pits with the aid of captive elephants (Nijman 2014). Researchers have reported – although this has not been necessarily verified – that automatic weapons are increasingly being used to kill protective members of the herds in Myanmar and Thailand (Nijman 2014). In Sri Lanka, smugglers have used much more sophisticated methods compared to Myanmar and Thailand to capture elephants such as sedating the maternal elephants using tranquilizing guns and injecting tranquilizers into the young elephants. Meanwhile, automatic weapons are also used to kill protective members of the herds. As live young elephants are prized higher than adults in Myanmar and Thailand (Nijman 2014), the same market trend can be anticipated in Sri Lanka.

Legal protection for wild Asian elephants in Sri Lanka

Elephants are mainly protected by three acts of legislation and two other acts of legislation can also be utilized in combating the illegal live wild elephant trade in Sri Lanka, the

authority for which has been delegated to two government Institutions (Table 2). There is no legal provision given to any private entity to capture elephants from the wild for any reason in any circumstances without prior permission granted by the Director General of DWC. The constitution of the Democratic Socialist Republic of Sri Lanka itself provides for protection for nature. According to Article 27(14) of the constitution, the state shall protect, preserve, and improve the environment for the benefit of the community. Wild elephants are a part of the nature; therefore, the state bears the responsibility of protecting them. Other than that, Prevention of Cruelty to Animals Ordinance No.13 of 1907 and Fauna and Flora Protection Ordinance No. 2 of 1937 (FFPO) provide more legislative provisions for combating illegal live wild elephant smuggling in the country.

The most relevant law is the FFPO as amended by Act No. 49 of 1993 and Act No. 22 of 2009 which deals with both wild and domestic elephants. DWC was established and charged with management and implementation of the Fauna and Flora Protection (Amendment) Act, No.22 of 2009. In view of provisions in Section 22A (12) of the last amendment in 2009 any elephant which has not been registered under the provision of the FFPO shall be presumed to have been taken or removed from the wild without lawful authority or approval and such elephants shall be deemed to be public property. The provisions of the Offences Against Public Property Act, No. 12 of 1982 shall accordingly apply in respect of such elephants. Furthermore, any offence committed under the Act involving an elephant shall be a non-bailable offense and the provisions of the Bail Act, No. 30 of 1997 and the Code of Criminal Procedure Act, No. 15 of 1979 shall apply in respect of such an offense (DWC 2017).

Prevention of Cruelty to Animals Ordinance No.13 of 1907 make better provision for the prevention of cruelty to all animals and these provisions can be utilized to protect elephants found in captivity suffering pain by reason of starvation, mutilation, or other ill-treatment. The Penal Code (Amendment) Act No. 29 of 1998 is also important as there is increasing evidence of false documents being used to smuggle elephants and get licenses.

In addition to national protection, international protection against live elephant trade is afforded by The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) which is a multinational agreement to which countries voluntarily join. The aim of CITES is to ensure that legal international trade does not endanger the survival of wild plants or animals. A permit system is the primary mechanism by which wildlife trade is regulated through CITES. Asian Elephants have been listed in Appendix I of CITES since its inception in 1975, generally prohibiting international trade in wild individuals and their derivatives except in exceptional circumstances. Article III.3.c of CITES allows trade in an Appendix I species if “a Management Authority of the State of import is satisfied that the specimen is not to be used for primarily commercial purposes”. Therefore, the international trade of elephants does occur on a small but regular basis in the zoo trade. Sri Lanka has been a member of CITES since 1979 (CITES 2014). However, transactions of live wild elephant trade in Sri Lanka appear not to have included cross border trade and therefore CITES is unable to be used as an effective mechanism to curb this type of trade.

Table 2. Legislations and authorized government institutions related to Asian elephant conservation in Sri Lanka.

Legislation	Authorized Institutions/Persons
The constitution of the Democratic Socialist Republic of Sri Lanka	General Public (under fundamental right jurisdiction)
Prevention of Cruelty to Animals Ordinance No.13 of 1907	Department of Police
Fauna and Flora Protection Ordinance No. 2 of 1937	DWC
	Department of Police
	General Public (under section 60E)
Offences committed against Public property Act No. 12 of 1982	Department of Police
Penal Code (Amendment) Act No. 29 of 1998	Department of Police

The corruption behind the illegal wild elephant trade in Sri Lanka

Government officials responsible for elephant conservation in Sri Lanka, under the influence of political pressure or influenced by bribery, either avoid making an honest attempt to combat this illegal trade of wild elephants or offer only limited resistance. On several occasions, attempts were made to release the suspected smuggled elephants to the offenders with only minor penalties. For example, the Director General of DWC was pressurized by high ranking politicians to release the elephants using loopholes in the legislation and even cabinet memoranda were presented (i.e. Cabinet memorandum number 16/2204/708/017-1 and dated 04th July 2016 forwarded by the Minister of Sustainable Development and Wildlife and cabinet memorandum number PMO/CM/44/2019 dated 10th September 2019 forwarded by the Prime Minister and two Ministers), to release the elephants to the offenders.

The climax of these organized wildlife crimes in Sri Lanka can arguably be considered to have been the August 2013 misplacement of the register of captive elephants archived at the head office of DWC. As a result, the DWC and the Police Department of Sri Lanka have launched several investigations into elephant smuggling since 2014. This has also led to protests by the general public and environmental activists against this illegal trade.

The past and the future of captive elephants in Sri Lanka

Historically, the captive elephant population in Sri Lanka mainly depended on wild captures and noosing and kraaling were widely used for capturing free ranging elephants (Elapatha 1997). However, the emotional outcry following an unfortunate incident of an elephant being killed in Panamure Kraal in Sabaragamuwa Province of Sri Lanka led to the ban on elephant captures by private individuals in the country in 1950 (Elapatha 1997; Katugaha 2008). However, private captures were again allowed in 1972–1974 and a few elephants that were captured by DWC were transferred to various parties (e.g. high-profile personnel, clergy etc.) until the 1980s. Again, this action was prohibited due to the rapidly declining number of elephants in the wild (Fernando et al. 2011). A national policy for the conservation and management of wild elephants was developed in 2006, which proposed to domesticate

problematic elephants to satisfy demands for captive elephants, but this policy has not yet been implemented effectively. Furthermore, fearing post-reproduction wearing of females, captive elephant owners do not permit captive breeding. Besides, it takes well over 10 years for newborns to serve as draft animals; thus calves do not help to generate any income for the elephant owners. Therefore, continuing demands for captive elephants as draft animals are fulfilled by illegally capturing from the wild.

Meanwhile surplus demand for elephants has been created since the end of the civil war in Sri Lanka in 2009. The emergence of peace has enabled the public to engage more in religious and cultural activities. Elephants hold a central position in the country's two main religions, Buddhism and Hinduism (Wisumperuma 2004). Therefore, demand increased to domesticate elephants to provide for religious and cultural festivals. The demand for live elephants had also increased tremendously among the emerging class of new rich businessmen because elephants are symbolic statements of physical and mental strength, intelligence, responsibility, and prosperity (Fernando et al. 2011).

Corruption, ineffective laws, weak judicial systems, lack of enforcement of wildlife law and light sentences allow criminal networks to keep plundering wildlife with little regard for the consequences (De Silva and De Silva 2007; Shepherd and Nijman 2008b; Nijman 2010). These factors make the illegal wildlife trade a low-risk business with high returns. The masterminds behind illicit wildlife trade operations are not penalized by the law enforcement. Instead, local poachers are usually the only ones caught, leaving the real culprits operational and capable of striking again (WWF 2017), and the situation is more or less similar in Sri Lanka. At the same time, smugglers use Buddhist culture as a Trojan horse and the influence of certain religious leaders is tapped to manipulate investigations into the live elephant trade and related policy decisions in Sri Lanka (Prakash 2014).

Domestic and wild elephants in Sri Lanka are treated under the same legislation, the Fauna and Flora Protection Ordinance No. 2 of 1937 (FFPO), and this is an undoubted advantage for combating the illegal live elephant trade in the country. The population of wild Asian elephants in Thailand is estimated at between 3126–3341, and about 3783 individuals belong to the Thai domestic elephant population (Asian Elephant Specialist Group 2019). Compared to Thailand, the percentage of elephant population under captivity in Sri Lanka is very low and has historically been declining (Fernando et al. 2011), making it relatively easy to control such illegal trade in Sri Lanka.

In terms of impact, habitat loss associated with smuggling leads to extirpation of elephants from certain home ranges. The Sri Lankan illegal live elephant trade specifically targeted males. This can skew the sex ratio of a population toward a female bias and reduce genetic variability, fecundity and recruitment (Sukumar 2003). Several studies have also found that such targeted extractions interfere with the herd's complex social structure and can cause long-lasting psychological effects on individuals (Bradshaw et al. 2005; Ishengoma et al. 2008; Archie and Chiyo 2012) as they have strong social networks (see Perera 2015).

Recommendations for improved conservation and management

Based on our study, we make a series of recommendations that should result in implementing policy to reduce the trafficking of Asian elephants in Sri Lanka and to improve the conservation management of the species.

In the short term, we urge the relevant authorities and government bodies to speed up the judiciary process against suspects and penalize the offenders who smuggled the elephants from the wild for trade purposes. It goes without saying that this should happen in a fair and just manner, irrespective of the suspect's social status, political affiliation or role in society.

If officers of the DWC are either directly or indirectly involved in the trade, including by assisting the smuggling rackets, immediate legal and/or disciplinary action should be taken. Any measures taken should be made public in order to deter those tempted by this illegal act in the future.

In the intermediate term, we urge that funds, expertise and time be made available to assist the Elephant Transit Home in the Udawalawe National Park and Pinnawala Elephant Orphanage with the smuggled elephants under their care. This assessment will help to determine whether these elephants are fit enough to be released back to the wild.

Still in the intermediate term, we urge the enactment of a national policy on captive elephants which introduces a scientific and transparent process regarding the registration and renewal of licenses to hold captive elephants. This should lead to a limit on the use of captive elephants for cultural, religious, and tourism purposes. As part of this, we urge the authorities responsible for the welfare and conservation of Asian elephants in Sri Lanka to adopt the standardized captive elephant registration protocols and best practices proposed by the Seventeenth Conference of Parties of CITES in 2016 and the second Asian Elephant Range States' meeting in 2017. These guidelines include DNA registration, monitoring protocols for captive populations, guidelines for the management and welfare of captive elephants, disease management including zoonotic diseases, training and capacity building of staff and mahouts, and specific national policy to manage the captive elephant population to avoid illicit live elephant trade (Sakamoto 2017). These new protocols may discourage the malpractices associated with the illegal trade of wild Asian elephants and secure the welfare of captive Asian elephants in Sri Lanka.

Conclusion

Our study, for the first time, has provided the best available information regarding the extent, mechanisms and the potential impacts of live wild Asian elephant smuggling in Sri Lanka. Although the numbers of smuggled elephants are relatively low compared to neighboring countries, it is very clear that smugglers have been using sophisticated methods and operate under strong networks involving corrupt wildlife officers, politicians, clergymen and even military personnel. Despite the availability of sufficient local

legislation to stop these illicit activities and protect endangered Asian elephants from smuggling, the lack of active enforcement of wildlife law is hindering the progress of conservation of wild elephants in Sri Lanka.

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